REMARKS

Prior to entry of this paper, Claims 1-26 were pending. In the Final Office Action dated March, 25 2008, Claims 1-26 were rejected. In this paper, Claim 26 has been amended to correct a typographical error. Accordingly, Claims 1-26 are currently pending. For at least the following reasons, the applicant's representative respectfully submits that each of the presently pending claims is in condition for allowance.

Rejections based on Azimi

Claims 1-3, 5-11, 13-24, and 26 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,163,183 to Azimi et al. ("Azimi"). Claims 4, 12, and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Azimi in view of U.S. Patent No. 6,417,704 to Nakajima et al. ("Nakajima"). Each of these rejections is respectfully traversed.

It is respectfully submitted that the rejection to Claim 1 should be withdrawn at least because Azimi fails to disclose, "a comparator circuit that is arranged to provide a trigger signal by comparing a reference signal to a temperature sensor signal," as recited in the applicant's Claim 1. It is respectfully submitted that the signal at reference electrode 24 of Figure 3 of Azimi is a bandgap reference voltage - not a temperature sensor signal. A bandgap reference voltage is substantially independent of temperature and therefore it is not a temperature sensor signal.

The Office Action states that a bandgap reference voltage can be used as a temperature signal. The Office Action further states, "Band gaps depend on temperature because of thermal expansion." (Office Action, page 14).

The applicant's representative respectfully disagrees. A bandgap reference circuit does not output a temperature signal by employing the thermal expansion of a bandgap. Rather, bandgap reference circuits are often referred to as such because they can have an output voltage with a value that is close to the theoretical bandgap of silicon at 0 K. However, the output voltage itself is not dependent on or correlative with any bandgap. Instead, bandgap reference circuits are well known in the art to output a constant voltage that is substantially indepenendent of temperature. In general, bandgap reference circuits combine one or more circuit elements that produce a proportional to absolute temperature (PTAT) signal with one or more circuit elements that produce a

complementary to absolute temperature (CTAT) signal. The PTAT and CTAT signals are combined in such manner so as to to make the resultant bandgap voltage substantantially independent of temperature. (see, e.g., U.S. Reissue Patent No. 30,586 to Brokaw).

It is respectfully submitted that the rejections to Claims 2-12 and 25 should be withdrawn at least because they depend from Claim 1.

It is respectfully submitted that the rejection to Claim 22 should also be withdrawn at least because Azimi does not disclose "wherein the temperature sensor signal is indicative of a temperature," as presently recited in Claim 22. As discussed above, Azimi's bandgap reference voltage is substantially independent of temperature. Therefore, this voltage cannot be indicative of temperature.

It is respectfully submitted that the rejection to Claim 23 should also be withdrawn at least because Azimi does not disclose "wherein the temperature sensor signal is proportional to a temperature," as presently recited in Claim 23. As discussed above, Azimi's bandgap reference voltage is substantially independent of temperature. Therefore, this voltage cannot be proportional to a temperature.

It is respectfully submitted that the rejection to Claim 24 should also be withdrawn at least because Azimi does not disclose "wherein the comparator circuit compares the temperature sensor signal to the reference signal in order to perform a temperature comparison." The Office Action states, "the comparator circuit (20) compares the temperature sensor signal (24) to the reference signal (25) in order to perform a temperature comparison." (Office Action, page 6). The applicant's representative disagrees. The voltage at reference electrode 24 of Figure 3 is Azimi's bandgap reference voltage. As discussed above, this voltage is substantially independent of temperature and therefore it is not a temperature signal. Further, comparator circuit 20 does not perform a temperature comparison. According to Azimi, the circuit of Figure 3 provides undervoltage monitoring and power failure indication. (Azimi, col. 4, lines 20-25). Therefore, the comparator circuit 20 at most performs a comparison to monitor undervoltage or to detect a power failure.

It is respectfully submitted that the rejection to Claim 21 should also be withdrawn at least because Azimi does not disclose "the comparator trips when the temperature sensed by the

temperature sensor signal reaches a pre-determined level," as recited in Claim 21. As discussed above, Azimi's bandgap voltage is substantially independent of temperature and therefore it does not sense temperature. Further, Azimi's comparator circuit 20 does not trip based on a pre-determined level of temperature. As discussed above, Azimi's comparator circuit 20 does not perform a temperature comparison. Rather, it performs a comparison to monitor undervoltage or to detect a power failure.

It is respectfully submitted that the rejection to Claim 25 should also be withdrawn at least because Azimi does not teach or suggest "wherein the hysteresis-and-output-sensor circuit is arranged to provide hysteresis in a range of about 2°C to about 10°C of hysteresis for the temperature comparison when the hysteresis is enabled." The Office Action references case law to state that "since it has been held that where *the general conditions of a claim* are disclosed in the prior art, discovering the optimum workable ranges involves routine skill in the art." (Office Action, page 13; Emphasis added). The applicants' representative respectfully disagrees with the Office Action's application of case law. Here, *the general conditions* of Claim 25 are not disclosed in Azimi because Azimi's comparator circuit 20 does not perform a temperature comparison. Rather, Azimi's comparator circuit 20 performs a comparison to monitor an undervoltage or to detect a power failure. A person skilled in the art would not monitor an undervoltage or detect a power failure using a temperature range of hysteresis. Further, because Azimi's bandgap reference voltage does not significantly vary with temperature, a person skilled in the art would not be able to use Azimi's circuit to derive the temperature range of Claim 25. (In fact, Azimi provides no discussion of temperature whatsoever).

It is respectfully submitted that the rejections to independent Claims 13 and 20 should be withdrawn at least because Azimi fails to disclose, "activating hysterisis if a temperature-sensing condition has occured," as presently recited in Claim 13 and also in Claim 20. The Office Action states "the bandgap voltage sensed via the comparator also senses the a temperature condition and the hysteresis is actived based on that condition." (Office Action, page 14). The applicant's representative respectfully disagrees. As discussed above, Azimi's bandgap circuit does not sense temperature because Azimi's bandgap reference voltage is substantially independent of temperature. For at least that reason , Azimi cannot not disclose "a temperature-sensing condition" and therefore

Azmimi also fails to disclose "activating hysteresis if a temperature-sensing condition has occurred."

It is respectfully submitted that the rejections to Claims 14-19 and 26 should be withdrawn at least because they depend from Claim 13.

Additionally, it is respectfully submitted that the rejection to Claim 26 should be withdrawn at least because Azimi does not disclose "activating at least one of a fan or a heater when the output signal is asserted," as presently recited in Claim 26. The Office Action again references case law to state that "it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate *the claimed apparatus* from a prior art apparatus satisfying the claimed structural limitations." (Office Action, page 7; Emphasis added). The applicants' representative respectfully disagrees with the Office Action's application of case law. Claim 26 is a claimed method – not *a claimed apparatus*. Because it is a claimed method, the recited elements of Claim 26 cannot be rejected on the basis of intended use. Rather, to support a rejection under Section 102, each of the recited claim elements of Claim 26 must be found in a single prior art reference.

Rejections based on Lim

Claims 1-3, 5-11, 13-22, 24, and 26 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,614,857 to Lim et al. ("Lim"). Each of the rejections is respectfully traversed.

It is respectfully submitted that the rejection to Claim 1 should be withdrawn at least because Lim fails to disclose, "a comparator circuit that is arranged to provide a trigger signal by comparing a reference signal to a temperature sensor signal," as recited in the applicant's Claim 1.

The Office Action opines that Vin2 is a temperature sensor signal and it is inherent that Vin2 is such because "the temperature of resistor R11 increases as the current through it increase thereby providing a higher voltage Vin2." (Office Action, pages 15-16). The applicant's representative respectfully submits that the Office Action must provide rationale or evidence tending to show inherency. "The fact that a certain result or characteristic may occur or be present in the prior art is

not sufficient to establish the inherency of that result or characteristic." (MPEP 2112). As is known in the art, some resistors can have a resistance that varies with temperature, while others can have a resistance that does not vary with the temperature. The Office Action provides no rational or evidence that supports that case that the resistance of resistor R11 varies with temperature.

However, even assuming arguendo that the resistor R11 has a resistance that varies with temperature, a person skilled in the art would not construe voltage signal Vin2 as having a significant temperature dependency. Any increase or decrease in temperature would only result in a slight change to the overall resistance of resistor R11. This slight change would be insignificant and not detectable at OP20 (which receives voltage signal Vin2).

Additionally, it is respectfully submitted that the rejection to Claim 1 should be withdrawn for the following reasons that is independent of the aforementioned reason. It is respectfully submitted that the rejection to Claim 1 should be withdrawn at least because Lim fails to disclose, "a gate circuit that is arranged to provide an output signal by gating a gate input signal subject to control by a gate control signal, wherein the gate input signal is based at least in part on the trigger signal," as recited in the applicant's Claim 1.

The Office Action states, "Because the AND gate AND45 supplies the activation signal and/or the deactivation signal of Q45 which supplies the activation signal to OP20 to make Vout2 available, by a translation relationship AND45 makes Vout2 available, i.e. provides for Vout2 and thus meets the claims language." The Office Action further states, "According to Merriam Webster the definition of provide it "to supply or make available." (Office Action, page 15).

The applicant's representative respectfully disagrees. Even assuming arguendo that the aforementioned definition of *provide* is correct, Lim does not teach that AND gate AND45 "suppl[ies] or make[s] available" Vout2. Rather, Lim indicates that Vout2 is made available by OP20 circuit, which supplies Vout2 based on the outputs of many components, including second voltage generator 10, first threshold voltage generator 41, and second threshold generator 45. Indeed, Vout2 is made available independent of whether AND gate AND45 outputs a signal. For example, if second threshold voltage generator 45 was removed from Lim's Figure 4 (including AND gate AND45), OP20 circuit would continue to make Vout2 available. By contrast, if the gate

circuit of Claim 1 was removed from the circuit of Claim 1, the output signal of the gate circuit would no longer be available.

It is respectfully submitted that the rejections to Claims 2, 3, 5-11, 21-22, and 24 should be withdrawn at least because they depend from Claim 1.

It is respectfully submitted that the rejection to Claim 21 should also be withdrawn at least because Lim does not disclose "the comparator trips when the temperature sensed by the temperature sensor signal reaches a pre-determined level," as recited in Claim 21.

As discussed above, the Office Action has not evidenced that the resistance of R11 varies with temperature. However, even assuming arguendo that the resistance across R11 varied with temperature, a person skilled in the art would understand that the resistance variation would be slight and any change it caused in voltage signal Vin2 would be insignificant or undetectable. Therefore, voltage signal Vin2 is incapable of reaching a pre-determined level based on temperature.

It is respectfully submitted that the rejection to Claim 22 should also be withdrawn at least because Lim does not disclose "wherein the temperature sensor signal is indicative of a temperature," as presently recited in Claim 22. As discussed above, even assuming arguendo that the resistance across R11 varied with temperature, any change to voltage signal Vin2 would be insignificant or undetectable. Therefore, voltage signal Vin2 is incapable of being indicative of temperature.

It is respectfully submitted that the rejection to Claim 24 should also be withdrawn at least because Lim does not disclose "wherein the comparator circuit compares the temperature sensor signal to the reference signal in order to perform a temperature comparison." Lim's Figure 4 shows the OP20 circuit receiving voltage signals Vin2 and Vth as inputs. As discussed above, even assuming arguendo that the resistance across R11 varied with temperature, voltage signal Vin2 has an insignificant or undetectable temperature dependence. In addition, voltage signal Vth is not associated with temperature. Therefore, Lim's OP20 circuit cannot perform a temperature comparison by comparing voltage signals Vin2 and Vth.

It is respectfully submitted that the rejections to independent Claims 13 and 20 should be withdrawn at least because Lim fails to disclose, "activating hysterisis if a temperature-sensing

condition has occured," as presently recited in Claim 13 and also in Claim 20. The Office Action states "Lim discloses activating hysterisis (via Q41) if a temperature-sensing condition has occured." (Office Action, page 9). The applicant's representative respectfully disagrees. As discussed above, even assuming arguendo that the resistance across R11 varied with temperature, voltage signal Vin2 cannot sense temperature because it would have an insignificant or undetectable temperature dependence. For at least that reason, Lim cannot disclose "a temperature-sensing condition" and therefore Lim also fails to disclose "activating hysterisis if a temperature-sensing condition has occurred."

Additionally, it is respectfully submitted that the rejections to independent Claims 13 and 20 should also be withdrawn for the following reasons that are independent of the aforementioned reason. It is respectfully submitted that the rejection to Claims 13 and 20 should be withdrawn at least because Lim fails to disclose, "ensuring that the hysteresis is automatically inactive when the circuit is powering up," as recited in the applicant's Claim 13 and also in Claim 20. The Office Action states "[u]nless the comparator 30, meets the predetermined threshold of 30, during power up the hysteresis is inactive, because no signal passes to the hysteresis circuit until the power up condition is met." The applicant's representative respectfully disagrees. Although Lim's circuit of Figure 4 is presumably powered up in some fashion, Lim does not disclose that the comparator 30 ensures that hysteresis is automatically inactive. Even assuming arguendo that comparator 30 has a predetermined threshold based on voltage signal Vref, Lim makes no explicit or implicit disclosure that the voltage signals Vin1 or Vref would be different from each other during power up such that the comparator 30 can determine that the circuit of Figure 4 is in the process of powering up.

It is respectfully submitted that the rejections to Claims 14-19 and 26 should be withdrawn at least because they depend from Claim 13.

Additionally, it is respectfully submitted that the rejection to Claim 26 should be withdrawn at least because Lim does not disclose "activating at least one of a fan or a heater when the output signal is asserted," as presently recited in Claim 26. The Office Action again references case law to state that "it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate *the claimed apparatus* from a prior art apparatus satisfying the claimed structural limitations." (Office Action, page 12; Emphasis added). The

applicants' representative respectfully disagrees with the Office Action's application of case law. Claim 26 is a claimed method – not *a claimed apparatus*. Because it is a claimed method, the recited elements of Claim 26 cannot be rejected on the basis of intended use. Rather, to support a rejection under Section 102, each of the recited claim elements of Claim 26 must be found in a single prior art reference.

CONCLUSION

It is respectfully submitted that each of the presently pending claims (Claims 1-26) is in condition for allowance and notification to that effect is requested. The Examiner is encouraged to contact the applicant's representative at the below-listed telephone number if it is believed that the prosecution of this application may be assisted thereby. Although only certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentable. The applicant reserves the right to raise these arguments in the future.

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Respectfully submitted,

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